

Straw Cutter.

Patented Feb. 20, 1845.

Fig. 4



UNITED STATES PATENT OFFICE.

D. M. SECHLER, OF WOOSTER, OHIO.

STRAW-CUTTER.

Specification of Letters Patent No. 3,920, dated February 20, 1845.

To all whom it may concern:

Be it known that I, DANIEL M. SECHLER, of Wooster, in the county of Wayne and State of Ohio, have invented certain new and useful Improvements on Straw-Cutters; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a geometrical elevation of the front of a straw-cutter with said improvements attached, Fig. 2 a right-side, and Fig. 3 a left-side elevation of the same.

Construction.—The frame consists of three posts A in front, which recline slightly backward, and which are mortised into a transverse sill B, and connected on the top by a plate C. Furthermore there are two posts D in rear, connected by two crosspieces E, on the upper one of which the wider or back-end of the box or hopper F rests. Between the posts D, and into the crosspieces, is framed a small post G, for the purpose hereafter described. Two of the posts A, the middle one and the one on the right, are connected with the posts D by means of the pieces H, lengthwise with the box. The two upper ones of these last mentioned pieces again are connected by the crosspiece I, at a distance of about one third of the length of the pieces H from the posts D. Directly in front of the hopper, between the two above named posts A, there is a crosspiece J framed into said posts. This serves the double purpose of strengthening the frame, and for the plate *a*, against the outer edge of which the knife works, to be fastened to. The top of this plate is flush with the upperside of the bottom of the box in front. Back of the two posts A, standing on the top-connecting pieces H, and fastened to both, are two short standards K, each of which having a vertical slot in it. Into the edges of these standards are mortised the front ends of the side pieces of the box. Below the slots, in appropriate bearings in the standards work the gudgeons of the lower feeding roller L. This roller is placed so as to project very slightly above the upper side of the bottom of the hopper in front, said bottom extending not farther than to said roller. The gudgeons of the upper feeding-roller M extend through the above-named

slots of the standards K, and to their ends are (movably) attached rods *b*, which extend downward, somewhat below the top connecting pieces H, where they are fastened to a piece of wood N, which connects them to each other transversely. To the center of this piece is framed a wooden lever O, extending under the box, and nearly parallel with it, and the farther end of which has a tenon, which works on a pin in a mortise in the small post G. There is a spiral spring P, the lower end of which is attached to the top of the lever O and upper end of which presses against the underside of the crosspiece I. On the right side of the frame (Fig. 2), near the tenon of the crosspiece I and to the upper connecting-piece H is attached, by means of a pin, a lever *c*, which extends (in a slightly inclined direction) toward the front of the frame, and slightly beyond it. About midways it moves in a guide *d*, the lower end of which is inserted into the aforesaid piece H, which it leaves in a horizontal direction (see Fig. 4) for a sufficient distance to allow the lever *c* to move freely up and down, and then takes an upward turn, in a vertical direction, to any required height. In this guide are a number of holes (as indicated on the drawing by dots) for the reception of a pin for the purpose hereafter described in the "operation" of the machine. To the inner side of the lever *c* is attached a click *e*, by means of a pin, on which it moves. This click or pawl works into a ratchet-wheel *f*, which is fastened to the left extremity of the shaft of the lower feeding-roller L. The upper feeding roller M has a similar ratchet wheel *g* on its right shaft end (see Fig. 3), and outside of said ratchet-wheel a bent lever *h* is hung upon the same shaft-end, the extremity of which projects beyond the front of the frame to the same distance as the lever *c* on the opposite side of the machine. On the back of said lever is a projection *x* shaped like a click or pawl, which acts upon the ratchet wheel *g*, in a similar manner to the click *e* and wheel *f*. There is a guide *r* fastened to the left side of the post A, which is shaped like the one on the opposite side, and furnished with holes to correspond, and for the same purpose as hereafter described.

The knife or cutter-gate Q, which moves up and downward in front of the machine, is formed by an oblong frame, the lower

crosspiece of which extends on each side beyond the two posts A in such a manner as to form gudgeons for the pitmen *i* to be attached to. These pitmen are somewhat
 5 longer than the gate Q, and their upper ends are attached to cranks *k* on a transverse shaft *l*, which moves in boxes on the rear-side of the posts A above the box or hopper F. To one of the cranks is attached a handle
 10 *m*, and to the opposite end of the shaft a fly-wheel R. The gate is kept against the front of the posts A, and moves behind projecting flanges *n* fastened to said posts. On the face of the gate are fastened pins
 15 or studs, which project sideways in opposite directions; the one *o* acting upon the lever *c* is placed about midway between the top and bottom of the gate, and the other one *p* about one fourth its length from the
 20 top of the gate. The knife or cutter *q* is fastened to the gate in a slanting direction of any convenient angle.

A box or hopper S with a spout at the bottom may be attached in front of the
 25 rollers, which will prevent the scattering of the chaff.

Operation.—The straw having been put into the hopper, the machine is set in motion, by applying power to the crank-handle
 30 *m*. By means of the connecting-rods or pitmen *i*, the crank or rotary motion is changed into a straight one, the gate Q sliding up and down in nearly a vertical direction. During its upward tendency the projecting ear *o* catches the underside of the
 35 projecting end of the lever *c* and raises it up, in consequence whereof the click *e* is also raised, and must consequently act upon its ratchet-wheel *f*, by which the lower feeding cylinder is moved. At the same time the

ear *p* catches the projecting turn of the reciprocating click *h*, which causes the click, in a similar manner, to act upon its ratchet-wheel *g*, and consequently upon the upper
 45 feeding-roller, with the difference that this roller moves in a contrary direction to the roller L. During the downward slide of the gate, the ears leave the lever *c* and the click *h*, allowing them to drop in their resting
 50 places, ready for the next action. By means of the rods *b*, the cross piece N, the lever O, and the spiral spring P, the upper feeding roller is held down to the straw, yielding
 55 when circumstances require it. The bent lever *h* being hung to the shaft of the upper roller, rises and falls with it, while the extremity, upon which the stud *p* of the gate acts, falls always back (by its own weight)
 60 upon the base or lower part of the guide *r*, or upon a pin inserted in one of the holes of the said guide. By means of the pin inserted into any particular hole the feed
 may be regulated to any desired length.

The operation of the knife requires no description, the operation of the gate where-
 65 to it is fastened having been explained.

What I claim as my invention and desire to secure by Letters-Patent, is—

The arrangement of the lever with its click *h* and ratchet-wheel *g* in combination
 70 with the pins or studs *o* and *p* upon the cutter-gate, by which I regulate the length of the feed, and at the same time insure the operation of the pins upon the click; all of which being arranged, constructed, and
 75 operates as herein above described.

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Witnesses:

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 JOHN SEIB.